

Release notes for ENDF/B Development n-063_Eu_154
evaluation

ENDF
B-VII.dev

April 26, 2017

- checkr Warnings:

1. A previous error halted parsing of the current section
MAT=6334, MF= 1, MT=451 (1): Parsing stopped

```
ERROR(S) FOUND IN MAT=6334, MF= 1, MT=451
SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER    94 TO    99999
```

- checkr Errors:

1. A variable is outside the allowed ENDF range
MAT=6334, MF= 1, MT=451 (0): Variable range

```
ERROR(S) FOUND IN MAT=6334, MF= 1, MT=451
MOD =      1 OUT OF RANGE      0 -      0      SEQUENCE NUMBER    94
```

2. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 2, MT=151 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6334, MF= 2, MT=151
SECTION 2/151 NOT IN DIRECTORY      SEQUENCE NUMBER    1
```

3. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 1 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 1
SECTION 3/ 1 NOT IN DIRECTORY      SEQUENCE NUMBER    1
```

4. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 2
SECTION 3/ 2 NOT IN DIRECTORY      SEQUENCE NUMBER    1
```

5. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 4 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 4
SECTION 3/ 4 NOT IN DIRECTORY      SEQUENCE NUMBER    1
```

6. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 16
SECTION 3/ 16 NOT IN DIRECTORY      SEQUENCE NUMBER    1
```

7. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 17 (0): Directory (b)

- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 17 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 17 NOT IN DIRECTORY | | |
8. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 22 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 22 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 22 NOT IN DIRECTORY | | |
9. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 28 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 28 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 28 NOT IN DIRECTORY | | |
10. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 51 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 51 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 51 NOT IN DIRECTORY | | |
11. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 52 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 52 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 52 NOT IN DIRECTORY | | |
12. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 53 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 53 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 53 NOT IN DIRECTORY | | |
13. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 54 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 54 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 54 NOT IN DIRECTORY | | |
14. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 55 (0): Directory (b)
- | | | |
|---|-----------------|---|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 55 | SEQUENCE NUMBER | 1 |
| SECTION 3/ 55 NOT IN DIRECTORY | | |
15. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 56 (0): Directory (b)

- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 56 | |
| SECTION 3/ 56 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
16. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 57 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 57 | |
| SECTION 3/ 57 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
17. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT= 91 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT= 91 | |
| SECTION 3/ 91 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
18. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT=102 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT=102 | |
| SECTION 3/102 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
19. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT=103 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT=103 | |
| SECTION 3/103 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
20. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT=104 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT=104 | |
| SECTION 3/104 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
21. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT=105 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT=105 | |
| SECTION 3/105 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
22. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 3, MT=107 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 3, MT=107 | |
| SECTION 3/107 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
23. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 2 (0): Directory (b)

- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 2
SECTION 4/ 2 NOT IN DIRECTORY SEQUENCE NUMBER 1
24. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 16 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 16
SECTION 4/ 16 NOT IN DIRECTORY SEQUENCE NUMBER 1
25. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 17 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 17
SECTION 4/ 17 NOT IN DIRECTORY SEQUENCE NUMBER 1
26. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 22 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 22
SECTION 4/ 22 NOT IN DIRECTORY SEQUENCE NUMBER 1
27. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 28 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 28
SECTION 4/ 28 NOT IN DIRECTORY SEQUENCE NUMBER 1
28. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 51 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 51
SECTION 4/ 51 NOT IN DIRECTORY SEQUENCE NUMBER 1
29. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 52 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 52
SECTION 4/ 52 NOT IN DIRECTORY SEQUENCE NUMBER 1
30. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 53 (0): Directory (b)
- ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 53
SECTION 4/ 53 NOT IN DIRECTORY SEQUENCE NUMBER 1
31. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 54 (0): Directory (b)

- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 54 | |
| SECTION 4/ 54 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
32. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 55 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 55 | |
| SECTION 4/ 55 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
33. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 56 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 56 | |
| SECTION 4/ 56 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
34. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 57 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 57 | |
| SECTION 4/ 57 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
35. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 4, MT= 91 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 4, MT= 91 | |
| SECTION 4/ 91 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
36. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 5, MT= 16 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 5, MT= 16 | |
| SECTION 5/ 16 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
37. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 5, MT= 17 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 5, MT= 17 | |
| SECTION 5/ 17 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
38. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 5, MT= 22 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=6334, MF= 5, MT= 22 | |
| SECTION 5/ 22 NOT IN DIRECTORY | SEQUENCE NUMBER 1 |
39. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 5, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=6334, MF= 5, MT= 28
SECTION 5/ 28 NOT IN DIRECTORY SEQUENCE NUMBER 1

40. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=6334, MF= 5, MT= 91 (0): Directory (b)

ERROR(S) FOUND IN MAT=6334, MF= 5, MT= 91
SECTION 5/ 91 NOT IN DIRECTORY SEQUENCE NUMBER 1

• **psyche** Warnings:

1. Non-threshold reaction with Q value differing from PSYCHE's expectations
FILE 3 / SECTION 103 / THE CALCULATED Q 1.65433E+06 DISSAGREES WITH THE GIVEN Q 1.49950E+06 (0): Iffy Q

FILE 3
SECTION 103
THE CALCULATED Q 1.65433E+06 DISSAGREES WITH THE GIVEN Q 1.49950E+06

• **linear** Errors:

1. Negative cross section found
0: Neg. Sig(E)

Linearize ENDF/B Cross Sections (LINEAR 2015-1)

Retrieval Criteria----- MAT
Monitor Mode----- Off
Minimum Cross Section----- 1.0000E-10 (Default Option)
... [62 more lines]

• **fudge-4.0** Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevelBreitWigner (Error # 0): missingResonanceChannel

WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"

2. Potential scattering hasn't converted, you need more L's!
resonances / resolved (Error # 1): potentialScatteringNotConverged

WARNING: Potential scattering hasn't converged by L=0 at E=27.5 eV, xs[0]/xs[0]=100.0% > 0.1%

3. The URR for this spin group needs higher energy resolution for correct representation of the average cross section
resonances / unresolved (Error # 0): URRinsufficientEnergyGrid

WARNING: More points needed in L=0 J=2.5 unresolved widths between 27.5 eV and 1.e2 eV
WARNING: More points needed in L=0 J=3.5 unresolved widths between 27.5 eV and 1.e2 eV
WARNING: More points needed in L=1 J=1.5 unresolved widths between 27.5 eV and 1.e2 eV
WARNING: More points needed in L=1 J=2.5 unresolved widths between 27.5 eV and 1.e2 eV
... plus 8 more instances of this message

4. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.23%

- fudge-4.0 Errors:

1. Calculated and tabulated Q values disagree.
reaction label 9: n[multiplicity:'2'] + Eu153 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -7106473.171875 eV vs -6.4411e6 eV!

2. Calculated and tabulated Q values disagree.
reaction label 10: n[multiplicity:'3'] + Eu152 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -15656760.18283081 eV vs -1.4991e7 eV!

3. Calculated and tabulated Q values disagree.
reaction label 11: n + H1 + Sm153 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -7131747.707244873 eV vs -6.4682e6 eV!

4. Calculated and tabulated Q values disagree.
reaction label 12: Eu155 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 7487160.674926758 eV vs 8.1522e6 eV!

5. Calculated and tabulated Q values disagree.
reaction label 13: n + He4 + Pm150 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -1230199.248046875 eV vs -566560. eV!

6. Calculated and tabulated Q values disagree.
reaction label 14: H1 + Sm154.s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 835319.7029418945 eV vs 1.4995e6 eV!

7. Calculated and tabulated Q values disagree.
reaction label 15: H2 + Sm153.s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -4907181.606323242 eV vs -4.2437e6 eV!

8. Calculated and tabulated Q values disagree.
reaction label 16: H3 + Sm152.s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -4518346.947143555 eV vs -3.8539e6 eV!

9. Calculated and tabulated Q values disagree.
reaction label 17: He4 + Pm151.s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 6633011.233398438 eV vs 7.296e6 eV!

- njoy2012 Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (0): GROUPE/conver (0)

---message from conver---cannot do complete particle production for mt= 16
only mf4/mf5 provided

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (1): GROUPT/conver (0)

---message from conver---cannot do complete particle production for mt= 17
only mf4/mf5 provided

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (2): GROUPT/conver (0)

---message from conver---cannot do complete particle production for mt= 22
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (3): GROUPT/conver (0)

---message from conver---cannot do complete particle production for mt= 28
only mf4/mf5 provided

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (4): GROUPT/conver (0)

---message from conver---cannot do complete particle production for mt= 91
only mf4/mf5 provided